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Mineral Industry Surveys

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CHROMIUM IN MAY 2003

On the basis of gross weight, consumption of chromium ferroalloys and metal in May 2003 decreased 12% compared with consumption in April 2003, according to the U.S. Geological Survey.

Included in this Mineral Industry Surveys are U.S. salient chromium statistics, U.S. Government stockpile inventory of chromium materials, and consumption by end use for May; consumer stocks of chromium ferroalloys and metal at the end of May; U.S. foreign trade data for selected chromium-containing materials in April; and chromite ore prices.

The Defense National Stockpile Center (DNSC) announced that it would consider offers for the purchase of 174,401 metric tons of chromite ore in fiscal year 2004 (October 1, 2002 through September 30, 2003). Chemical grade chromite ore accounted for 77,671 tons and refractory grade accounted for 106,626 tons of the chromite ore made available for sale (Defense National Stockpile Center, 2003a). The solicitation of offers describes material that is available for purchase and how purchases may be made.

Update

DNSC reported the sale of 5,443 metric tons of ferro-chromium valued at $3.2 million in June under Basic Ordering Agreement DLA-Ferrochromium-004 (Defense National Stockpile Center, 2003b).

DNSC announced the award of 10,345 kilograms of chromium metal valued at $37,289 in June under Invitation for Bids DLA-Chromium metal-002. DLA accepts bids for chromium metal on the fourth Thursday of the month (Defense National Stockpile Center, 2003c).

References Cited

Defense National Stockpile Center, 2003a, DLA-chromite, chemical & refractory grades-003: Defense National Stockpile Center, Solicitation of offers DLA-chromite, chemical & refractory grades-003, March 12, 73 p.

Defense National Stockpile Center, 2003b, Stockpile accepts chromium metal bids: Defense National Stockpile Center, News Release DNSC-03-2324, July 9, 1 p

Defense National Stockpile Center, 2003c, Stockpile announces ferrochromium sales for June 2003: Defense National Stockpile Center, News Release DNSC-03-2315, July 7, 1 p.

TABLE 1
U.S. SALIENT CHROMIUM STATISTICS[1]

(Metric tons, gross weight)

	2002	2003				
	January-December[2]	March	First quarter	April	May	January-May[2]
Production:						
Stainless steel production[3]	2,180,000 [4]	204,000	544,000	206,000	185,000	936,000 [4]
Components of U.S. supply:						
Stainless steel scrap receipts	815,000	83,100 [r]	197,000 [r]	74,000 [r]	64,300	335,000
Stainless steel scrap consumption	1,190,000	114,000	280,000 [r]	101,000 [r]	87,100	468,000
Imports for consumption:						
Chromite ore	112,000	5,010	61,300	574	NA	61,900 [5]
Ferrochromium:						
More than 4% carbon	283,000	28,500	96,800	53,200	NA	150,000 [5]
More than 0.5%, but not more than 3% carbon	8,040	1,820	3,160	520	NA	3,680 [5]
Not more than 0.5% carbon	25,600	2,620	6,430	921	NA	7,350 [5]
Ferrochromium silicon	28,900	--	3,350	7,550	NA	10,900 [5]
Total ferroalloy imports	345,000	33,000	110,000	62,200	NA	172,000 [5]
Chromium metal[6]	6,670	579	1,660	479	NA	2,140 [5]
Stainless steel	752,000	56,000	161,000	57,600	NA	219,000 [5]
Stainless steel scrap	81,000	6,340	16,300	7,110	NA	23,400 [5]
Distribution of U.S. supply:						
Industry consumer, chromium ferroalloys and metal	384,000	33,600	94,600 [r]	35,100 [r]	30,900	161,000
Exports:						
Chromite ore	24,300	596	1,790	1,900	NA	3,690 [5]
Chromium ferroalloys:						
High-carbon ferrochromium	13,500	220	591	188	NA	779 [5]
Low-carbon ferrochromium	2,070	132	440	183	NA	624 [5]
Ferrochromium silicon	281	--	--	19	NA	19 [5]
Total ferroalloy exports	15,900	352	1,030	390	NA	1,420 [5]
Chromium metal	498	78	150	47	NA	198 [5]
Stainless steel	273,000	25,700	76,100	27,900	NA	104,000 [5]
Stainless steel scrap	342,000	68,600	177,000	38,400	NA	215,000 [5]
Stocks at end of period:						
Industry consumer, chromium ferroalloys and metal	13,900	24,400	XX	29,600 [r]	32,400	XX
Government stockpile:						
Chromite ore	204,000	176,000	XX	176,000	176,000	XX
Chromium ferroalloys	763,000	746,000	XX	733,000	728,000	XX
Chromium metal	7,220	7,210	XX	7,210	7,160	XX

[r]Revised. NA Not available. XX Not applicable. -- Zero.

[1]Data are rounded to no more than three significant digits; may not add to totals shown.

[2]May include revised data.

[3]Data on stainless steel production reported by American Iron and Steel Institute; monthly, quarterly, and year-to-date production of stainless and heat-resisting raw steel.

[4]Includes revised data which is not broken out by specific month.

[5]Includes January through April data; May data not available.

[6]Includes waste and scrap and other.

TABLE 2

U.S. REPORTED CONSUMPTION AND STOCKS OF CHROMIUM PRODUCTS IN 2003[1]

(Metric tons, gross weight unless otherwise noted)

	April	May	January-May[2]
Consumption by end use:			
Alloy uses:			
Iron alloys:			
Steel:			
Carbon steel	285 r	257	1,410
High-strength low-alloy steel	543 r	554	2,690
Stainless and heat-resisting steel	30,800	26,800	139,000
Full alloy steel	1,290	1,230	6,680
Electrical steel	W	W	W
Tool steel	395 r	476	2,240
Unspecified Steel	W	W	W
Cast irons	W	W	W
Superalloys	694 r	657	3,260
Other alloys[3]	81 r	90	438
Total	35,100 r	30,900	161,000
Total, chromium content	20,500 r	18,300	94,800
Consumption by material:			
Low-carbon ferrochromium	1,870 r	1,690	8,990
High-carbon ferrochromium	29,000	25,800	133,000
Ferrochromium silicon	3,700 r	2,970	16,400
Chromium metal	370 r	324	1,600
Chromite ore	W	W	W
Chromium-aluminum alloy	28 r	38	171
Other chromium materials	W	W	W
Total	35,100 r	30,900	161,000
Total, chromium content	20,500 r	18,300	94,800
Consumer stocks:			
Low-carbon ferrochromium	1,570 r	1,480	XX
High-carbon ferrochromium	W	W	XX
Ferrochromium silicon	800	787	XX
Chromium metal	159 r	211	XX
Chromite ore	W	W	XX
Chromium-aluminum alloy	23 r	67	XX
Other chromium materials	24	21	XX
Total	29,600 r	32,400	XX
Total, chromium content	17,800	19,600	XX

[r]Revised. W Withheld to avoid disclosing company proprietary data; included in "Total." XX Not applicable.

[1]Data are rounded to no more than three significant digits; may not add to totals shown.

[2]May include revised data.

[3]Includes welding and alloy hard-facing rods and materials, wear- and corrosion-resistant alloys, and aluminum, copper, magnetic, nickel, and other alloys.

TABLE 3
U.S. GOVERNMENT STOCKPILE INVENTORY OF CHROMIUM MATERIALS[1, 2]

(Metric tons)

Period	Chromite ore		Chromium ferroalloys			Chromium metal
	Chemical	Refractory	High-carbon ferro-chromium	Low-carbon ferro-chromium	Ferro-chromium silicon	
2002:						
May	192,000	111,000	558,000	239,000	3,100	7,220
June	78,300	175,000 [3]	374,000	163,000	--	7,210
July	78,300	175,000	372,000	163,000	--	7,210
August	78,300	113,000	547,000 [3]	235,000 [3]	--	7,220 [3]
September	78,300	113,000	544,000	234,000	--	7,220
October	78,300	127,000 [3]	536,000	233,000	--	7,220
November	78,300	127,000	535,000	232,000	--	7,220
December	78,300	126,000	531,000	232,000	--	7,220
2003:						
January	78,300	126,000	527,000	231,000	--	7,220
February	78,300	126,000	521,000	229,000	--	7,220
March	78,300	98,000	517,000	228,000	--	7,210
April	78,300	98,000	505,000	228,000	--	7,210
May	78,300	98,000	501,000	227,000	--	7,160

-- Zero.

[1]Data are rounded to no more than three significant digits.

[2]These Government stocks are reported by the Defense National Stockpile Center in Inventory of Stockpile Materials R-1, which reports uncommitted inventory. Uncommitted inventory is that inventory for which there is no sales contract. Committed inventory is that inventory for which there is a sales contract; however, the material has not yet been shipped. For chromium materials, the R-1 report includes chromium materials that (1) meet specifications and are held in excess of goal and (2) do not meet specifications and are held in excess of goal. The R-1 report excludes chromium materials that are committed and awaiting shipment.

[3]The increase resulted from the reclassification of physical inventory from committed to uncommitted. It does not result from the addition of chromium materials to the stockpile.

Source: Defense National Stockpile Center.

TABLE 4

U.S. EXPORTS OF CHROMITE ORE, CHROMIUM FERROALLOYS, AND METAL[1]

Period	Chromite ore		Chromium ferroalloys[2]			Chromium metal[3]	
	Gross weight (metric tons)	Value (thousands)	Gross weight (metric tons)	Chromium content (metric tons)	Value (thousands)	Gross weight (metric tons)	Value (thousands)
2002:							
April	528	$822	674	412	$652	80	$699
May	494	153	774	452	686	48	493
June	17,200	824	456	261	416	24	265
July	335	89	394	240	369	25	366
August	345	61	771	469	577	38	414
September	458	171	664	394	589	25	253
October	2,490	842	9,880	6,460	4,650	44	404
November	456	122	520	307	462	35	445
December	415	93	296	178	288	55	483
January-December	24,300	4,070	15,900	10,100	10,100	498	4,940
2003:							
January	747	280	483	290	472	45	365
February	442	159	196	111	230	27	150
March	596	166	352	217	445	78	407
April	1,900	209	390	230	439	47	584
January-April	3,690	814	1,420	848	1,590	198	1,510

[1]Data are rounded to no more than three significant digits; may not add to totals shown.

[2]Includes low-, medium-, and high-carbon ferrochromium and ferrochromium silicon.

[3]Includes chromium metal waste and scrap.

Source: U.S. Census Bureau.

TABLE 5

U.S. IMPORTS FOR CONSUMPTION OF CHROMITE ORE, FERROCHROMIUM, AND CHROMIUM METAL[1]

(Metric tons)

	2002	2003		
	January-December[2]	March	April	January-April[2]
Chromite ore:				
Not more than 40% chromic oxide:				
Gross weight	1,080	--	77	77
Chromic oxide content	301	--	24	24
More than 40% but less than 46% chromic oxide:				
Gross weight	10,600	138	86	431
Chromic oxide content	4,470	NA	40	NA
46% or more chromic oxide:				
Gross weight	100,000	4,880	411	61,400
Chromic oxide content	46,700	2,270	204	NA
Total, all grades:				
Gross weight	112,000	5,010	574	61,900
Chromic oxide content	51,500	2,330	268	NA
Ferrochromium:				
Low-carbon:[3]				
Not more than 0.5%:				
Gross weight	25,600	2,620	921	7,350
Chromium content	17,000	1,840	633	5,090
More than 0.5% but not more than 3%:				
Gross weight	8,040	1,820	520	3,680
Chromium content	4,960	1,420	358	2,520
Total, low-carbon:				
Gross weight	33,600	4,450	1,440	11,000
Chromium content	21,900	3,260	991	7,610
High-carbon:[4]				
Gross weight	283,000	28,500	53,200	150,000
Chromium content	169,000	14,100	32,900	84,900
Total, all grades:				
Gross weight	316,000	33,000	54,600	161,000
Chromium content	191,000	17,400	33,900	92,500
Chromium metal:				
Other than waste and scrap	6,570	514	472	2,000
Waste and scrap	93	64	7	141
Total, all grades	6,670	579	479	2,140

NA Not available. -- Zero.

[1]Data are rounded to no more than three significant digits; may not add to totals shown.

[2]May include revised data.

[3]Ferrochromium containing not more than 3% carbon.

[4]Ferrochromium containing more than 4% carbon.

Source: U.S. Census Bureau.

TABLE 6

U.S. IMPORTS FOR CONSUMPTION OF CHROMITE ORE IN 2003, BY GRADE AND BY COUNTRY[1]

Grade and country	April			January-April[2]		
	Gross weight (metric tons)	Cr_2O_3 (metric tons)	Value[3] (thousands)	Gross weight (metric tons)	Cr_2O_3 (metric tons)	Value[3] (thousands)
Not more than 40% chromic oxide, South Africa	77	24	$30	77	24	$30
More than 40% but less than 46% chromic oxide, South Africa	86	40	12	431	NA	64
46% or more chromic oxide, South Africa	411	204	61	61,400	NA	3,030
Total	574	268	103	61,900	NA	3,130

NA Not available.

[1]Data are rounded to no more than three significant digits; may not add to totals shown.

[2]May include revised data.

[3]Customs import value generally represents a value in the foreign country and therefore excludes U.S. import duties, freight, insurance, and other charges incurred in bringing the merchandise into the United States.

Source: U.S. Census Bureau.

TABLE 7

U.S. IMPORTS FOR CONSUMPTION OF FERROCHROMIUM IN 2003, BY GRADE AND BY COUNTRY[1]

Grade and country	April			January-April[2]		
	Gross weight (metric tons)	Chromium content (metric tons)	Value[3] (thousands)	Gross weight (metric tons)	Chromium content (metric tons)	Value[3] (thousands)
High-carbon ferrochromium:[4]						
China	--	--	--	20	14	$25
Kazakhstan	30,500	20,800	$15,700	45,800	31,500	22,800
Russia	150	144	85	150	144	85
South Africa	16,400	8,190	5,360	87,500	43,300	25,900
Zimbabwe	6,130	3,700	2,430	16,400	9,990	6,050
Total	53,200	32,900	23,600	150,000	84,900	54,900
Low-carbon ferrochromium:[5]						
More than 0.5% but not more than 3% carbon:						
Kazakhstan	500	345	418	500	345	418
Mexico	--	--	--	1,550	1,250	1,050
Russia	--	--	--	11	5	12
South Africa	20	12	15	1,620	919	797
Total	520	358	434	3,680	2,520	2,280
Not more than 0.5% carbon:						
China	--	--	--	40	27	48
Germany	125	87	219	1,380	966	2,660
Japan	200	138	426	795	549	1,640
Kazakhstan	--	--	--	364	258	319
Mexico	--	--	--	200	156	177
Russia	496	342	485	4,440	3,040	4,010
South Africa	40	25	30	40	25	30
Turkey	60	42	79	100	67	148
Total	921	633	1,240	7,350	5,090	9,030
All grades:						
China	--	--	--	60	41	74
Germany	125	87	219	1,380	966	2,660
Japan	200	138	426	795	549	1,640
Kazakhstan	31,000	21,200	16,200	46,700	32,100	23,500
Mexico	--	--	--	1,750	1,410	1,230
Russia	646	486	569	4,600	3,190	4,100
South Africa	16,500	8,230	5,410	89,100	44,200	26,800
Turkey	60	42	79	100	67	148
Zimbabwe	6,130	3,700	2,430	16,400	9,990	6,050
Total	54,600	33,900	25,300	161,000	92,500	66,200

-- Zero.

[1]Data are rounded to no more than three significant digits; may not add to totals shown.

[2]May included revised data.

[3]Customs import value generally represents a value in the foreign country and therefore excludes U.S. import duties, freight, insurance, and other charges incurred in bringing the merchandise into the United States.

[4]Ferrochromium containing more than 4% carbon.

[5]Ferrochromium containing not more than 3% carbon.

Source: U.S. Census Bureau.

TABLE 8
U.S. IMPORTS FOR CONSUMPTION
OF CHROMIUM METAL IN 2003, BY GRADE AND BY COUNTRY[1]

Grade and country	April		January-April[2]	
	Gross weight (metric tons)	Value[3] (thousands)	Gross weight (metric tons)	Value[3] (thousands)
Waste and scrap:				
Germany	--	--	9	$166
Japan	--	--	22	152
Korea, Republic of	1	$8	3	15
Malaysia	--	--	1	3
Russia	--	--	100	361
Singapore	--	--	1	5
United Kingdom	5	61	5	61
Total	7	68	141	763
Other than waste and scrap:				
Austria	--	--	(4)	3
China	157	552	488	1,720
Finland	(4)	7	(4)	7
France	165	1,270	564	4,310
Germany	(4)	18	51	268
India	--	--	(4)	2
Italy	--	--	(4)	3
Kazakhstan	--	--	37	128
Russia	40	135	342	1,190
Singapore	--	--	(4)	11
Spain	--	--	4	17
Switzerland	(4)	3	(4)	10
Taiwan	--	--	(4)	4
United Kingdom	110	682	508	3,260
Total	472	2,670	2,000	10,900
All grades:				
Austria	--	--	(4)	3
China	157	552	488	1,720
Finland	(4)	7	(4)	7
France	165	1,270	564	4,310
Germany	(4)	18	60	434
India	--	--	(4)	2
Italy	--	--	(4)	3
Japan	--	--	22	152
Kazakhstan	--	--	37	128
Korea, Republic of	1	8	3	15
Malaysia	--	--	1	3
Russia	40	135	442	1,550
Singapore	--	--	1	16
Spain	--	--	4	17
Switzerland	(4)	3	(4)	10
Taiwan	--	--	(4)	4
United Kingdom	115	743	514	3,330
Total	479	2,740	2,140	11,700

-- Zero.

[1]Data are rounded to no more than three significant digits; may not add to totals shown.

[2]May include revised data.

[3]Customs import value generally represents a value in the foreign country and therefore excludes U.S. import duties, freight, insurance, and other charges incurred in bringing the merchandise into the United States.

[4]Less than 1/2 unit.

Source: U.S. Census Bureau.

TABLE 9

U.S. TRADE OF STAINLESS STEEL, BY PRODUCT, IN 2003[1]

Stainless steel product	April		January-April	
	Gross weight (metric tons)	Value[2] (thousands)	Gross weight (metric tons)	Value[2] (thousands)
Exports:				
Ingot	434	$1,640	1,640	$12,200
Flat-rolled (width > 600 mm)	15,500	27,000	52,800	103,000
Flat-rolled (width < 600 mm)	7,310	18,100	30,800	72,200
Bars and rods in irregular coils	120	303	675	1,890
Other bars and rods	1,570	7,960	4,970	26,000
Wire	606	3,510	2,930	17,700
Tubes, pipes, hollow profiles	2,390	10,100	10,200	44,300
Total	27,900	68,600	104,000	277,000
Stainless steel scrap	38,400	28,800	215,000	119,000
Grand total	66,300	97,400	319,000	396,000
Imports:				
Ingot	14,600	20,500	53,600	73,700
Flat-rolled (width > 600 mm)	21,200	36,200	83,900	134,000
Flat-rolled (width < 600 mm)	4,020	11,400	14,900	42,200
Bars and rods in irregular coils	3,770	6,100	13,900	22,200
Other bars and rods	5,960	13,300	21,500	47,700
Wire	3,170	9,580	10,900	32,200
Tubes, pipes, hollow profiles	4,950	19,500	20,000	79,900
Total	57,600	117,000	219,000	432,000
Stainless steel scrap	7,110	4,660	23,400	16,200
Grand total	64,700	121,000	242,000	448,000

[1]Data are rounded to no more than three significant digits; may not add to totals shown.

[2]Export value is free alongside ship (f.a.s.). Import value is Customs import value, which generally represents a value in the foreign country and therefore excludes U.S. import duties, freight, insurance, and other charges incurred in bringing the merchandise into the United States.

Source: U.S. Census Bureau.

TABLE 10
CHROMITE ORE PRICES

(Dollars per metric ton, gross weight unless otherwise noted)

Week ending	Turkey[1]		South Africa[2]				Philippines[3]
	1	2	1	2	3	4	
2002:							
01/04	50	55	37 - 55	50 - 70	100 - 120	NA	125 - 145
01/11	50	55					
01/18	50	55					
01/25	50	55					
02/01	50	55	37 - 55	50 - 70	100 - 120	NA	125 - 145
02/08	50	55					
02/15	50	55					
02/22	50	55					
03/01	50	55	35 - 50	48 - 70	100 - 120	NA	125 - 145
03/08	60	65					
03/15	60	65					
03/22	60	65					
03/29	60	65					
04/05	65	70	35 - 50	48 - 70	100 - 120	NA	125 - 145
04/12	65	70					
04/19	65	70					
04/26	65	70					
05/03	64	69	40 - 50	48 - 70	100 - 120	NA	125 - 145
05/10	60	65					
05/17	60	65					
05/24	60	65					
05/31	60	65					
06/07	60	65	40 - 50	48 - 70	100 - 120	NA	125 - 145
06/14	60	65					
06/21	60	65					
06/28	60	65					
07/05	60	65	40 - 50	48 - 70	100 - 120	NA	125 - 145
07/12	60	65					
07/19	60	65					
07/26	60	65					
08/02	60	65	40 - 50	48 - 70	100 - 120	NA	125 - 145
08/09	60	65					
08/16	60	65					
08/23	65	75					
08/30	65	75					
09/06	65	75	40 - 50	50 - 70	100 - 120	NA	125 - 145
09/13	65	75					
09/20	65	75					
09/27	65	75					
10/04	70	80	40 - 50	50 - 70	100 - 120	40 - 50	125 - 145
10/11	70	80					
10/18	70	80					
10/25	70	80					
11/01	70	80	40 - 50	50 - 70	100 - 120	40 - 50	125 - 145
11/08	70	80					
11/15	70	80					
11/22	70	80					
11/29	70	80					
12/06	70	80	40 - 50	50 - 70	100 - 120	40 - 50	125 - 145
12/13	70	80					
12/20	70	80					
12/27	70	80					

See footnotes at end of table.

TABLE 10--Continued
CHROMITE ORE PRICES

(Dollars per metric ton, gross weight unless otherwise noted)

Week ending	Turkey[1]		South Africa[2]				Philippines[3]
	1	2	1	2	3	4	
2003:							
01/03	70	80	35 - 40	45 - 55	100 - 120	40 - 50	125 - 145
01/10	70	80					
01/17	70	80					
01/24	70	80					
01/31	70	80					
02/07	70	80	35 - 40	45 - 55	100 - 120	40 - 50	125 - 145
02/14	70	80					
02/21	70	80					
02/28	75	85					
03/07	75	85	40 - 50	50 - 70	100 - 120	40 - 50	125 - 145
03/14	75	85					
03/21	75	85					
03/28	75	85					
04/04	75	85	40 - 50	50 - 70	100 - 120	45 - 50	125 - 145
04/11	75	85					
04/18	75	85					
04/25	75	85					
05/02	75	85	40 - 50	50 - 70	100 - 120	40 - 50	125 - 145
05/09	75	85					
05/16	75	85					
05/23	75	85					
05/30	75	85					
06/06	75	85	40 - 50	50 - 70	100 - 120	40 - 50	125 - 145
06/13	75	85					
06/20	75	85					
06/27	75	85					

NA Not available.

[1]Turkish 1 (T1) is called 38% - 40% Cr_2O_3 by Ryan's Notes (RN); T2 is called 44% Cr_2O_3 by RN.

[2]South African 1 (SA1) is called chemical grade, 46% Cr_2O_3, wet bulk, free-on-board (f.o.b.) by Industrial Minerals (IM); SA2 is called foundry grade, 46% Cr_2O_3, wet bulk, f.o.b. by IM; SA3 is called refractory grade, 46% Cr_2O_3, wet bulk, f.o.b. by IM; SA4 is called metallurgical grade, friable lumpy, 40% Cr_2O_3 by IM.

[3]Philippines is called refractory grade, concentrates, f.o.b. by IM.